

SECTION 16310

PANELBOARDS

PART 1 - GENERAL

1.1 PANELBOARDS

- A. Panelboards shall be provided with number and size of mains and branch circuits as shown on drawings, shall be mounted as indicated and shall have incoming lugs arranged to receive the conductors shown. Panelboards shall conform to latest UL and NEMA standards and shall bear UL labels.

PART 2 - PRODUCTS

2.1 PANELBOARDS

- A. Panelboards shall be dead-front, circuit breaker type equipped with single, double, or three pole thermalmagnetic quick-make, quick-break trip-free on overload or short circuit alternating current circuit breakers with trip ratings and frame size as shown on the drawings.
- B. Main and branch circuit breakers shall provide inverse time delayed tripping on overloads and instantaneous tripping on short circuits. Trip indication shall be clearly shown by the breaker handle taking position between ON and OFF when the breaker is tripped. Double and three pole breakers shall be common trip type. HACR type circuit breakers shall be provided for all circuits serving mechanical equipment.
- C. Bussing shall be such that any three adjacent single-pole breakers are individually connected to each of the three different phases in such a manner that two to three-pole breakers can be installed at any location. All current-carrying parts of the bus assembly shall be plated.
- D. Sub-feed breakers are acceptable, however, if used must be clearly labeled on front panel and on interior of panel enclosure with machine engraved label mechanically attached.
- E. Where a "space, space-only, or provision" is indicated on the drawings or elsewhere, the "space, space-only, or provision" shall be "fully equipped" and ready for the direct insertion of a circuit breaker. Additional hardware, bus extension kits, strap kits, and so forth shall not be required in order to properly add a circuit breaker to a designated "space".
- F. Each panelboard shall be provided with a hinged cover with a flush latch and lock with two keys and keyed the same as all other panelboards.
- G. Each panel shall be equipped with typewritten directory card, card holder, transparent protection and complete identifying data on inside of door. Each circuit shall be identified specifically with load and location spelled out on the directory, i.e. "lighting Rooms 204, 206, 208" - (not merely "lighting"). Room numbers shall match Owner's final signage designations, and not the numbers shown on contract drawings, as they are often different. Contractor shall update existing panel's directory card reflecting any changes made under this contract.

- H. Provide an isolated neutral bus for each panel for connection of both feeder and branch circuit neutral wires. Neutral bus shall have same current ratings as panel mains.
- I. Provide a separate equipment ground bus, bonded to the steel cabinet for each panel for connection of all ground wires and mark with a green stripe along the front of the bus. Equipment ground bus shall have same rating as panel mains.
- J. Ground fault circuit interrupting breakers shall be sized as indicated, shall conform to NEC, shall be UL listed, shall have a "push-to-test" button and visible indication of a tripped condition, and shall detect a current imbalance of approximately 5 milliamperes.
- K. Circuit breakers shall have 100% AIC rating, unless stated otherwise on drawings.
- L. Panelboards shall be equal to SQUARE-D, Type NQOD, NF, or I-LINE (HCN, HCM, HCP, HCW, HCWM, HCP-SU, HCR-U), or equal products by Cutler Hammer, Siemens, or G.E.

PART 3 - EXECUTION

3.1 PANELBOARDS

- A. Panelboards shall be so mounted that operating handle of top breaker is not more than 78" above the floor. Load on each panel shall be divided as evenly as possible between the phases in the panel.
- B. If at the option of the contractor, aluminum wire or cable is used and the corresponding conduit size was changed, it is the responsibility of the contractor to select a proper panelboard backcans to accommodate new conduit size and to provide adequate space for training and terminating the aluminum conductors.

END OF PANELBOARDS